

REMARKS

This responds to the Office Action dated March 3, 2006. Claims 1, 10, and 25 are amended. Claim 7 is cancelled. Claims 55 and 56 are added. As a result, claims 1-6 and 8-56 are now pending in this patent application.

§103 Rejection of the Claims

1. Claims 1-34, 38-50 and 54 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hartley et al. (U.S. Patent No. 6,076,015) in view of Street et al. (U.S. Patent No. 6,589,188). Applicant reserves the right to swear behind Street, such as permitted under 37 C.F.R. § 1.131. Nonetheless, Applicant respectfully traverses, as discussed below.

Concerning claims 1-9, and 12:

Applicant has amended claim 1 to overcome the rejection by incorporating the subject matter of dependent claim 7. Applicant cannot find in Street and/or Hartley any disclosure, teaching, or suggestion of controlling therapy using a pulmonary physiological state classification that is obtained using frequency domain thoracic information from a spectrum analyzer circuit. Street apparently pertains merely to monitoring respiratory patterns, without providing any responsive therapy. Hartley delivers therapy, but not in response to a pulmonary physiological state classification obtained using frequency domain thoracic information from a spectrum analyzer. Because the combination of Hartley and Street fails to establish all elements of independent claim 1, Applicant respectfully submits that there is presently no *prima facie* case of obviousness with respect to claim 1, or its dependent claims 2-9 and 12. Accordingly, Applicant respectfully requests withdrawal of this basis of rejection of claims 1-9 and 12.

Concerning claims 10-11, 13-24, 41-50, and 54:

Applicant has amended claim 10 to put it in independent form to incorporate the subject matter from its independent claim 1. Applicant cannot find in Street and/or Hartley any disclosure, teaching, or suggestion of a frequency domain adaptive filter comprising a first input coupled to the output of the time-to-frequency domain converter circuit, the frequency domain adaptive filter also comprising an output coupled to the input of the spectrum analyzer. Applicant respectfully disagrees that filter 435 of Hartley somehow constitutes a frequency domain adaptive filter. For example, FIG. 14 of the present patent application clearly illustrates

an example of a frequency domain adaptive filter 224, which is connected to the output of FFT module 218 and, therefore, clearly operates on a signal that has been transformed into the frequency domain, rather than on a time-domain signal. Because the Office Action admits that Hartley does not include any time-domain-to-frequency-domain converter circuit (see Office Action ¶ 2), it necessarily cannot provide a frequency domain adaptive filter. Instead, the filter 435 of Hartley performs its frequency-selective filtering on a time-domain signal. In sum, because Street and/or Hartley apparently fail to disclose, teach, or suggest all elements of claim 10, Applicant respectfully submits that there is presently no *prima facie* case of obviousness with respect to claims 10-11. Similarly, claims 13-24 recite or incorporate a frequency domain adaptive filter, and claims 41-50 and 54 recite or incorporate filtering the frequency domain thoracic signal in the frequency domain using a cutoff frequency that varies as a function of the detected heart rate. Accordingly, Applicant respectfully requests withdrawal of this basis of rejection of claims 10-11, 13-24, 41-50, and 54.

Concerning claims 25-40:

Applicant has amended claim 25 to incorporate the subject matter of claims 35 and 36, which were indicated to be allowable, and the subject matter of claim 37, and to further include determining rapid shallow non-periodic respiration, or respiration having increased inhalation duration and decreased exhalation duration. Although claim 37 was not indicated to be allowable, Applicant respectfully traverses for reasons specifically addressed below with respect to the rejection of claim 37. Moreover, Applicant cannot find in the references of record any disclosure, teaching, or suggestion of determining rapid shallow non-periodic respiration, or respiration having increased inhalation duration and decreased exhalation duration. An example of rapid shallow non-periodic respiration is illustrated in FIG. 13B of the present patent application and the accompanying written description. An example of respiration having increased inhalation duration and decreased exhalation duration is illustrated at FIG. 9 of the present patent specification and the accompanying written description.

Accordingly, Applicant respectfully submits that claims 25-40 are now allowable over the references of record, and Applicant respectfully requests allowance of these claims.

2. Claims 37 and 53 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hartley et al. (U.S. Patent No. 6,076,015) in view of Street et al. (U.S. Patent No. 6,589,188), further in view of Zhu et al. (U.S. 2003/0028221). Applicant reserves all rights with respect to Street et al. and Zhu et al., including the right to swear behind such references as permitted under 37 C.F.R. § 1.131. Nonetheless, Applicant respectfully traverses.

Applicant can find no disclosure, teaching, or suggestion in the cited portions of Hartley, Street, and/or Zhu of filtering a frequency domain thoracic signal—such filtering being performed in the frequency domain—and using resulting frequency domain respiration information to provide a resulting indication of pulmonary fluid indication. Instead, Hartley et al. apparently merely uses thoracic impedance to obtain time-domain respiration information, which it uses to perform rate-adaptive pacing. Street apparently merely performs spectral analysis to detect certain breathing patterns, such as periodic breathing, but does not address thoracic fluid accumulation. Zhu et al. apparently detects thoracic fluid accumulation, however, it does not do so using frequency domain information. Moreover, Applicant respectfully submits that it would not be obvious to one of ordinary skill in the art to use frequency domain information to provide an indication of thoracic fluid accumulation, which is typically a slow—nearly static—process, unlike the periodic breathing pattern addressed by Street. In sum, the asserted combination of Hartley, Street, and Zhu fails to establish all elements of claims 37 and 53 (such as performing frequency domain filtering to obtain frequency domain respiration information for classifying a pulmonary physiological state, and using the pulmonary physiological state for providing information about thoracic fluid accumulation), and further fails to provide any motivation to combine these references, which are directed towards very different purposes. Accordingly, Applicant respectfully submits that there is presently no *prima facie* case of obviousness with respect to claims 37 and 53, and Applicant respectfully requests withdrawal of this basis of rejection of these claims.

Allowable Subject Matter

Claims 35, 36, 51 and 52 were objected to as being dependent upon a rejected base claim, but were indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Nonetheless, for the reasons discussed

above, Applicant respectfully submits that such claims are allowable in their present form, and Applicant respectfully requests allowance of these claims.

Reservation of Rights; References Not Relied Upon

Applicant need not address any references that were made of record but not relied upon as a basis of rejection. Applicant does not admit that such references are prior art or applicable against the present claims, and Applicant reserves the right to address such references if they are subsequently made a basis of rejection. Applicant reserves the right to swear behind any references which are cited in a rejection under 35 U.S.C. 102(a), 102(e), 103/102(a), and 103/102(e), such as provided under 37 C.F.R. § 1.131 or otherwise. Statements distinguishing the claimed subject matter over the cited documents are not to be interpreted as admissions that the documents used as references are prior art.

Request for Telephonic Interview

In the event that the above amendment and remarks do not place the application in condition for allowance, Applicant respectfully requests that the Examiner contact Applicant's counsel, Suneel Arora, at the below number to help expedite prosecution of this case. Applicant appreciates the Examiner's assistance in this regard, and is confident that agreement can be reached with respect to these claims and the cited references.

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney at (612) 373-6951 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

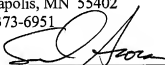
Respectfully submitted,

JEFFREY E. STAHMANN ET AL.

By their Representatives,

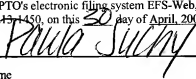
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Date May 30, 2006

By 
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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being filed using the USPTO's electronic filing system EFS-Web, and is addressed to: Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22343-1450, on this 30 day of April, 2006.

Name



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